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**FCC PART 74H
LOW POWER LICENSED
WIRELESS MICROPHONE TRANSMITTER**

APPLICANT	ZAXCOM, INC.
	230 WEST PARKWAY, UNIT 9 POMPTON PLAINS N.J. 07444 USA
FCC ID	PR6ZMT
MODEL NUMBER	ZMT3.5; ZMT3.6
PRODUCT DESCRIPTION	BELTPACK WIRELESS MICROPHONE
STANDARD APPLIED	CFR 47 Part 74 & IC RSS-123
DATE SAMPLE RECEIVED	12/12/2016
FINAL TEST DATE	1/19/2017
TESTED BY	Tim Royer
APPROVED BY	Cory Leverett

Report Number	Version Number	Description	Issue Date
2480AUT16TestReport_	Rev1	Initial Issue	01/09/2017
	Rev2	Added Test Frequency	01/11/2017
	Rev3	Added designator	1/19/2017

**THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL
WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.**

TABLE OF CONTENTS

GENERAL REMARKS	3
GENERAL INFORMATION.....	4
RESULTS SUMMARY	5
RF POWER OUTPUT	6
Test Data: Mean Output Power Measurement Table	6
OCCUPIED BANDWIDTH	7
Test Data: 121K2D1W Operating Bandwidth Measurement Table.....	7
Test Data: 175K0D1W Operating Bandwidth Measurement Table.....	7
Test Data: 482.1 MHz 121K2D1W 99% Plot.....	8
Test Data: 482.1 MHz 175K0D1W 99% Plot.....	9
Test Data: 512.1 MHz 121K2D1W 99% Plot.....	10
Test Data: 512.1 MHz 175K0D1W 99% Plot.....	11
Test Data: 607.9 MHz 121K2D1W 99% Plot.....	12
Test Data: 607.9 MHz 175K0D1W 99% Plot.....	13
Test Data: 614.1 MHz 121K2D1W 99% Plot.....	14
Test Data: 614.1 MHz 175K0D1W 99% Plot.....	15
Test Data: 697.9 MHz 121K2D1W 99% Plot.....	16
Test Data: 482.1 MHz 121K2D1W Emission Mask Plot	17
Test Data: 482.1 MHz 175K0D1W Emission Mask Plot	18
Test Data: 512.1 MHz 121K2D1W Emission Mask Plot	19
Test Data: 512.1 MHz 175K0D1W Emission Mask Plot	20
Test Data: 607.9 MHz 121K2D1W Emission Mask Plot	21
Test Data: 607.9 MHz 175K0D1W Emission Mask Plot	22
Test Data: 614.1 MHz 121K2D1W Emission Mask Plot	23
Test Data: 614.1 MHz 175K0D1W Emission Mask Plot	24
Test Data: 697.9 MHz 121K2D1W Emission Mask Plot	25
SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)	26
Test Data: 482.1 MHz	27
Test Data: 512.1 MHz	27
Test Data: 607.9 MHz	28
Test Data: 614.1 MHz	28
Test Data: 697.9 MHz	29
FIELD STRENGTH OF SPURIOUS EMISSIONS.....	30
Test Data: 512.10 MHz Measurement Table	30
Test Data: 614.10 MHz Measurement Table	31
FREQUENCY STABILITY	32
Test Data: Measurement Table.....	32
EMC EQUIPMENT LIST	33

GENERAL REMARKS

The attached report shall not be reproduced except in full without the written permission of Timco Engineering Inc.

Summary

The device under test does:

- ☒ Fulfill the general approval requirements as identified in this test report and was selected by the customer.
- ☐ Not fulfill the general approval requirements as identified in this test report

Attestations

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report.

All instrumentation and accessories used to test products for compliance to the indicated standards are calibrated regularly in accordance with ISO 17025 requirements.

I attest that the necessary measurements were made at:

Timco Engineering Inc.
849 NW State Road 45
Newberry, FL 32669



Tested by: _____

Name and Title: Tim Royer, Project Manager/Testing Engineer

Date: 1/19/2017



Reviewed and approved by: _____

Name and Title: Cory Leverett, Project Manager

Date: 1/19/2017

GENERAL INFORMATION

EUT Description	BELTPACK WIRELESS MICROPHONE
FCC ID	PR6ZMT
Model Number	ZMT3.5; ZMT3.6
Operating Frequency	482 – 608 MHz , & 614 – 698 MHz
Test Frequencies	482.1, 512.1, 607.9, 614.1, 697.9 MHz
Modulation	QPSK
EUT Power Source	☐ 110–120Vac/50– 60Hz
	☐ DC Power 12V
	☒ Battery Operated Exclusively
Test Item	☐ Prototype
	☒ Pre-Production
	☐ Production
Type of Equipment	☐ Fixed
	☐ Mobile
	☒ Portable
Test Conditions	The temperature was 26°C with a relative humidity of 50%.
Revision History to the EUT	None
Test Exercise	The EUT was placed in continuous transmit mode.
Applicable Standards	FCC CFR 47 Part 2, & 74 KDB 971168 D01 V02R02 ANSI/TIA 603-D:2010 ANSI C63.4 2014
Test Facility	Timco Engineering Inc. 849 NW State Road 45 Newberry, FL 32669 USA.

RESULTS SUMMARY

Rule Part	Requirement	Test Item	Result
2.1046(a), 74.861(e)(1)(ii)	Conducted Power	RF Power Output	Pass
2.1049(c), 74.861(e)(5)	Operating Bandwidth	Occupied Bandwidth	Pass
2.1049(c), 74.861(e)(6)(i)(ii)	Unwanted Emissions	Occupied Bandwidth	Pass
2.1051(a), 74.861(e)(6)(iii)	Unwanted Emissions	Spurious Emissions at Antenna Terminals	Pass
2.1053, 74.861(e)(6)(iii)	Unwanted Emissions	Field Strength of Spurious Emissions	Pass
2.1055, 74.861(e)(4)	Frequency Tolerance	Frequency Stability	Pass

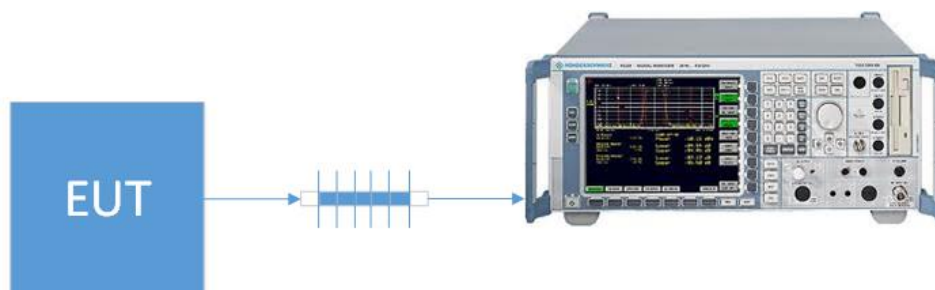
RF POWER OUTPUT

Rule Part No.: 2.1046(a), 74.861(e)(1)(ii)

Requirement: 250 mW conducted power

Procedure: KDB 971168 D01 Average Power Measurements section 5.2.1

Setup Diagram:



Test Data: Mean Output Power Measurement Table

Tuned Freq. MHz	Power Output		
	Level (dBm)	Level (mW)	Margin (mW)
482.1	14.99	31.6	218.4
512.1	15.31	34.0	216.0
607.9	15.26	33.6	216.4
614.1	15.19	33.0	217.0
697.9	14.80	30.2	219.8

Results Meet Requirements

OCCUPIED BANDWIDTH

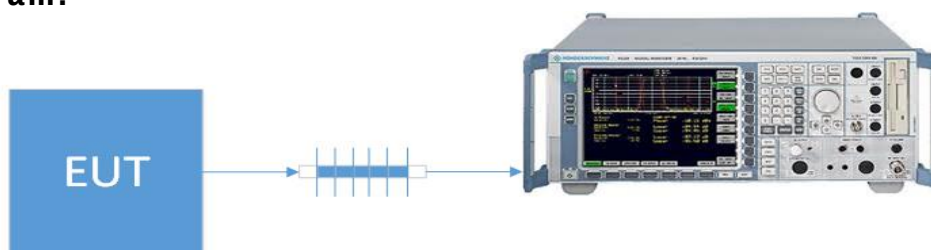
Rule Part No.: 2.1049(c), 74.861(e)(5), 74.861(e)(6)(i)(ii)

Requirement: The operating bandwidth shall not exceed 200 KHz, in addition the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB; On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB;

Procedure: KDB 971168 D01 Power Bandwidth 99% section 4.2
KDB 971168 D01 Spurious Emissions at antenna term section 6
TIA 603-D Side Band Spectrum section 2.2.11

Setup Diagram:



Test Data: 121K2D1W Operating Bandwidth Measurement Table

Tuned Freq (MHz)	Measured 99% BW (KHz)	Margin (KHz)
482.1	119.23	80.77
512.1	116.23	83.77
607.9	121.24	78.76
614.1	118.23	81.77
697.9	120.24	79.76

Test Data: 175K0D1W Operating Bandwidth Measurement Table

Tuned Freq (MHz)	Measured 99% BW (KHz)	Margin (KHz)
482.1	175.00	25.00
512.1	171.26	28.74
607.9	173.27	26.73
614.1	172.70	27.30

Results Meet Requirements

Applicant: ZAXCOM, INC.
FCC ID: PR6ZMT
REPORT: 2480AUT16TestReport_Rev3

[Table of Contents](#)

OCCUPIED BANDWIDTH

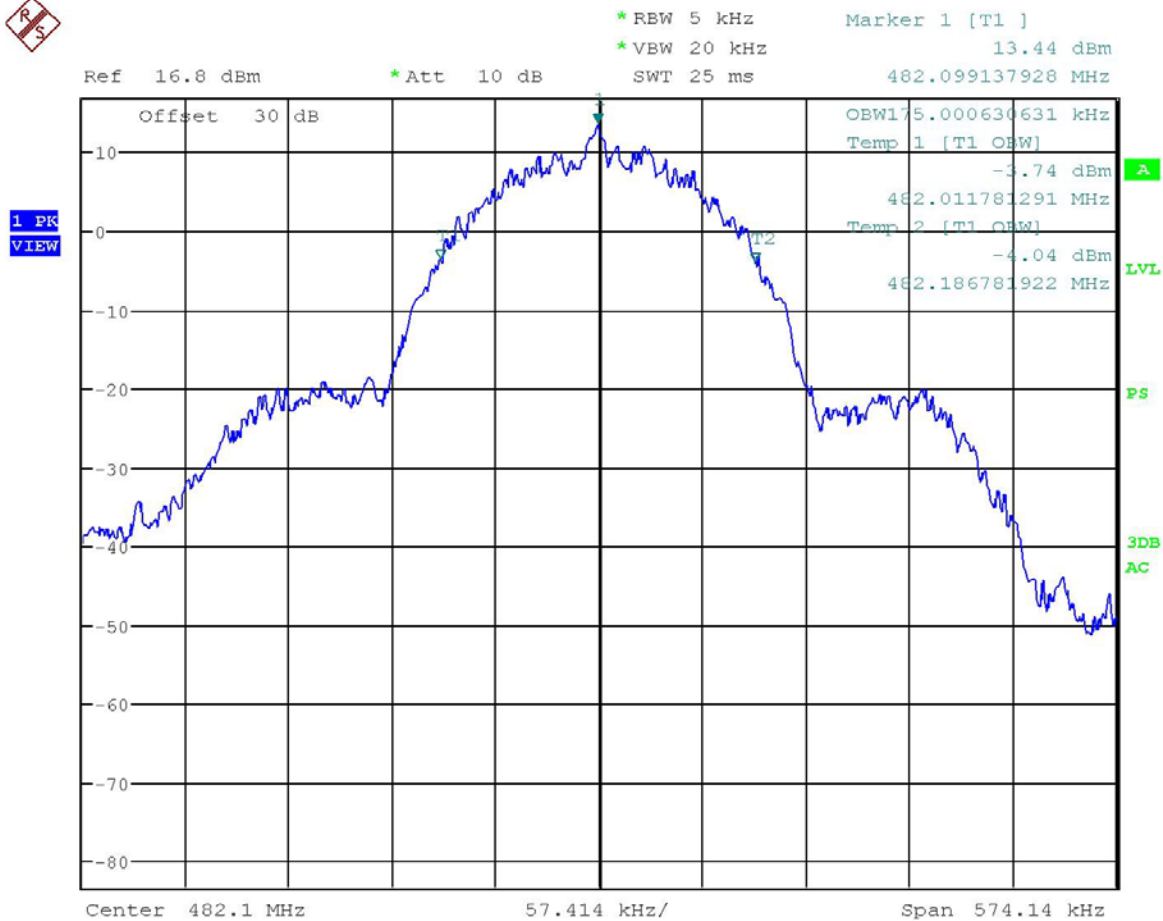
Test Data: 482.1 MHz 121K2D1W 99 % Plot



Date: 11.JAN.2017 14:30:28

OCCUPIED BANDWIDTH

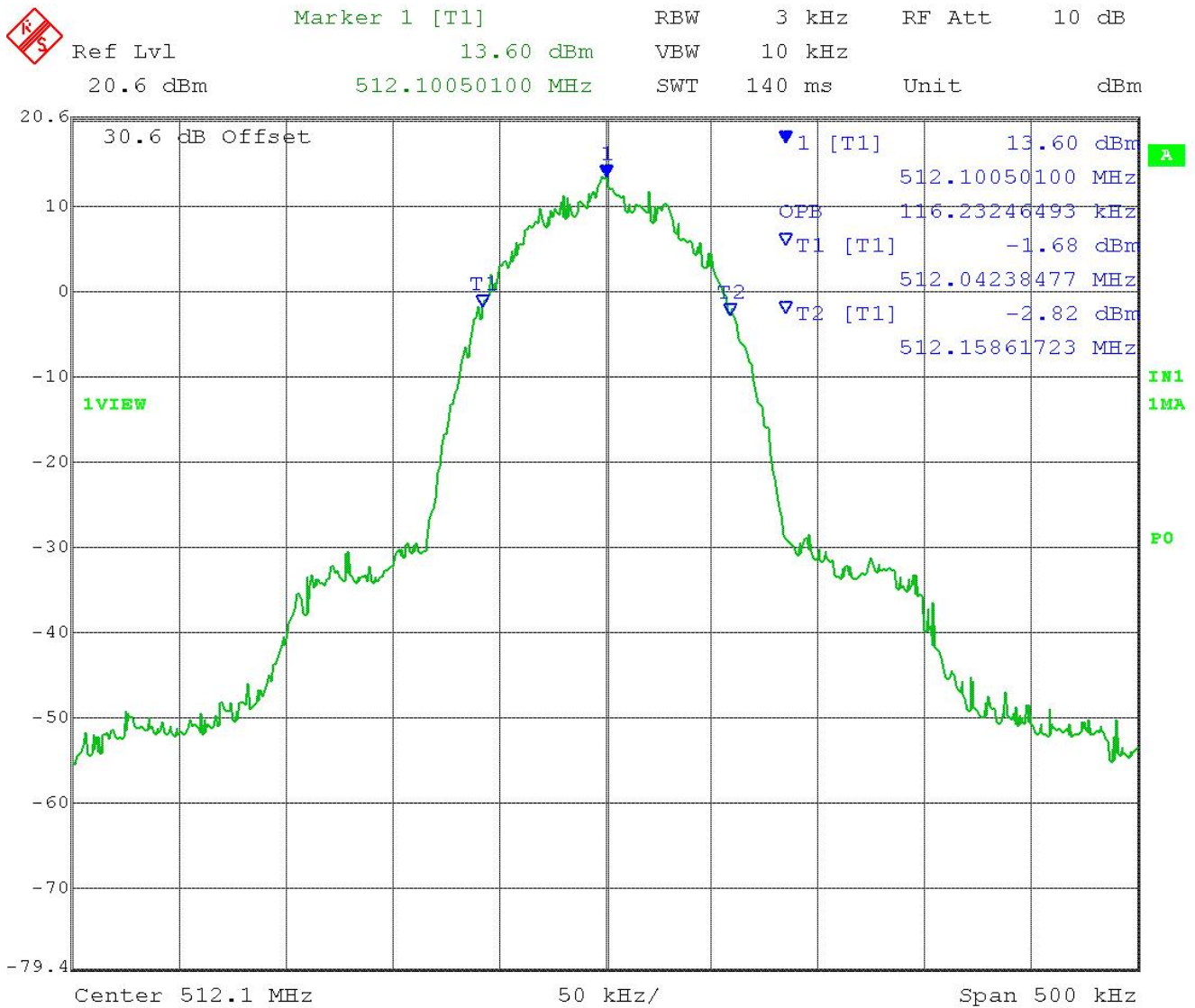
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Date: 19.JAN.2017 09:40:27

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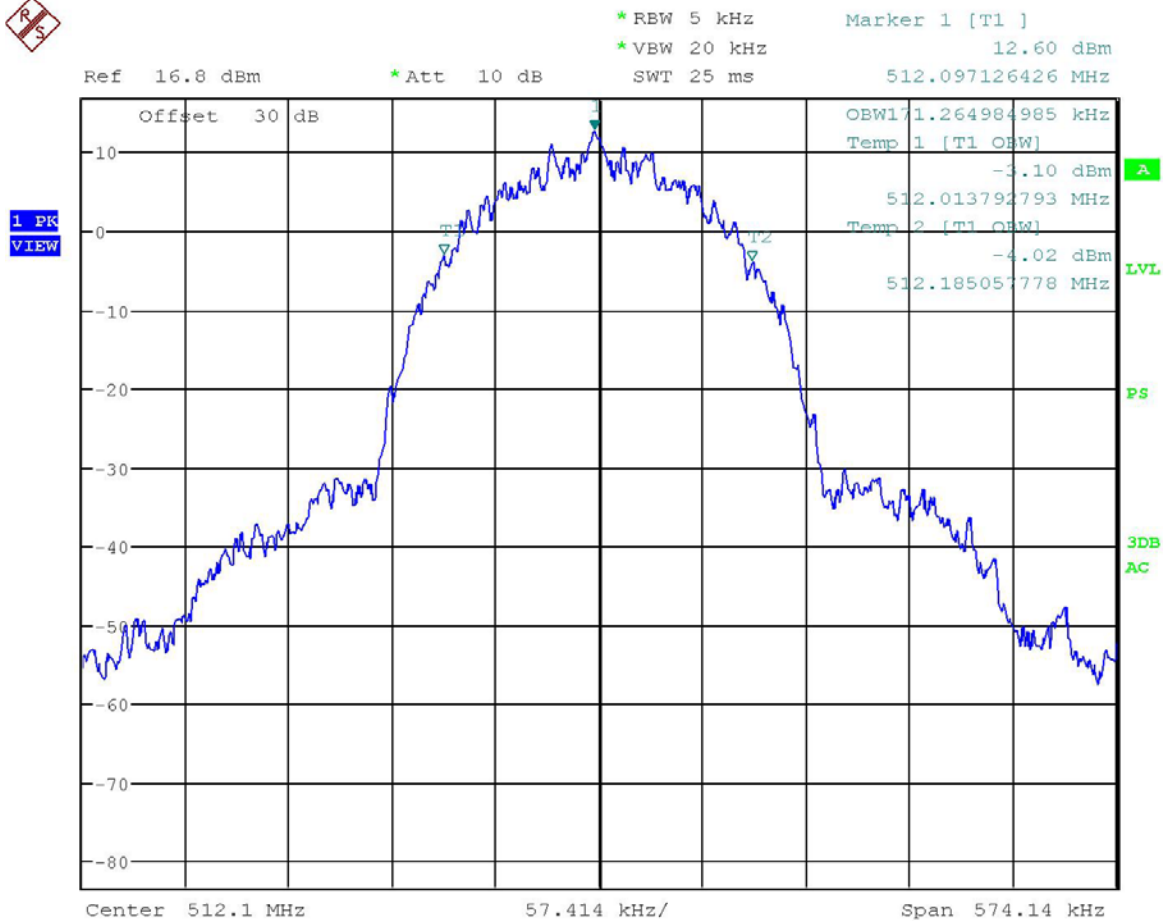
Test Data: 512.1 MHz 121K2D1W 99 % Plot



Date: 6.JAN.2017 08:58:35

OCCUPIED BANDWIDTH

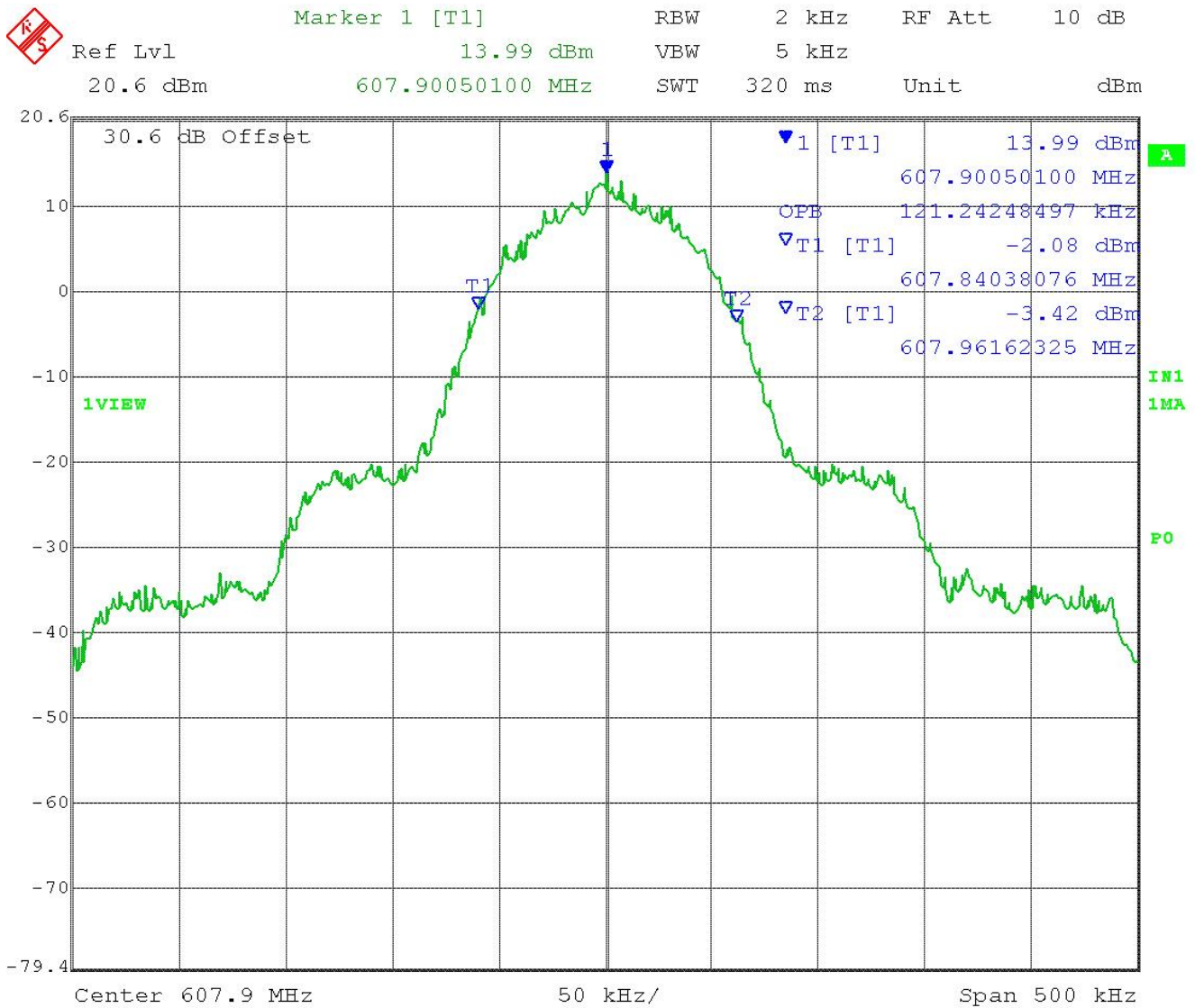
Test Data: 512.1 MHz 175K0D1W 99 % Plot



Date: 19.JAN.2017 09:44:04

OCCUPIED BANDWIDTH

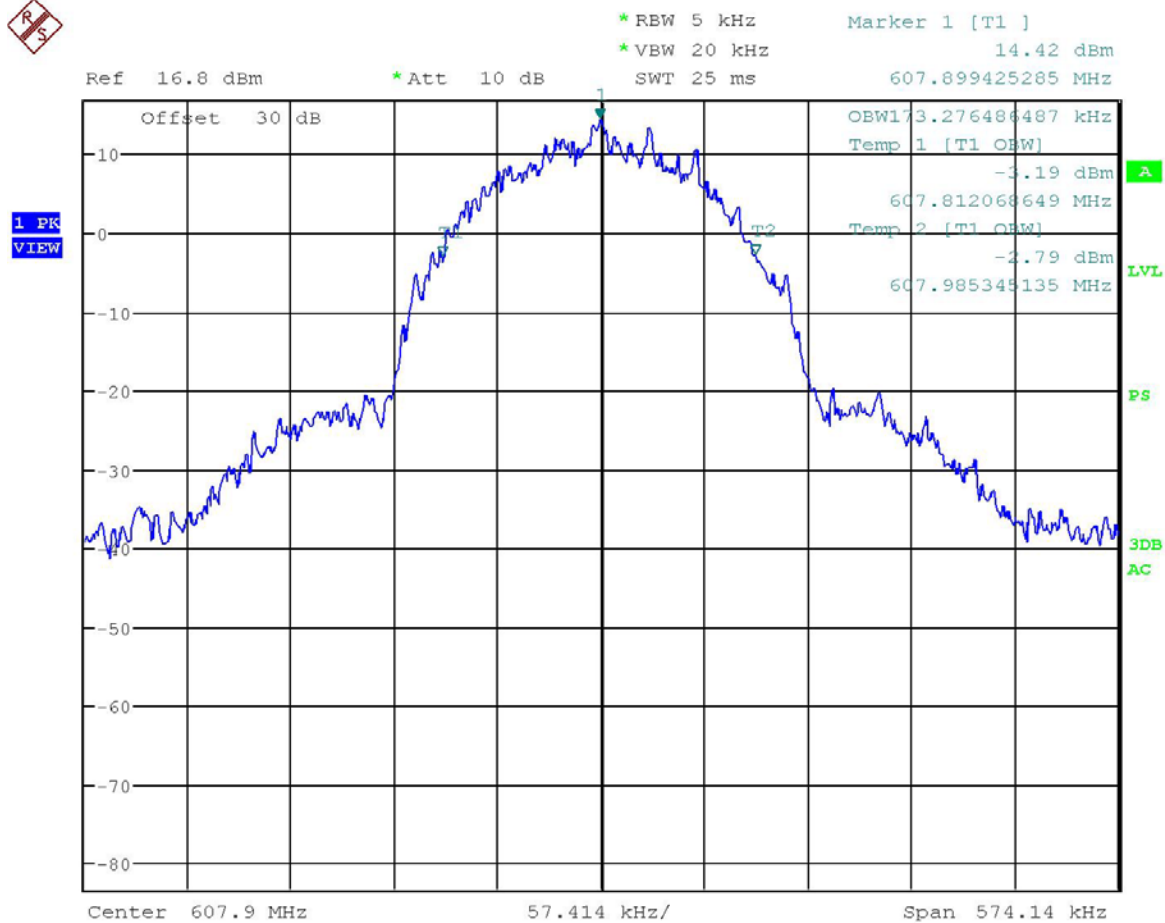
Test Data: 607.9 MHz 121K2D1W 99 % Plot



Date: 6.JAN.2017 09:41:17

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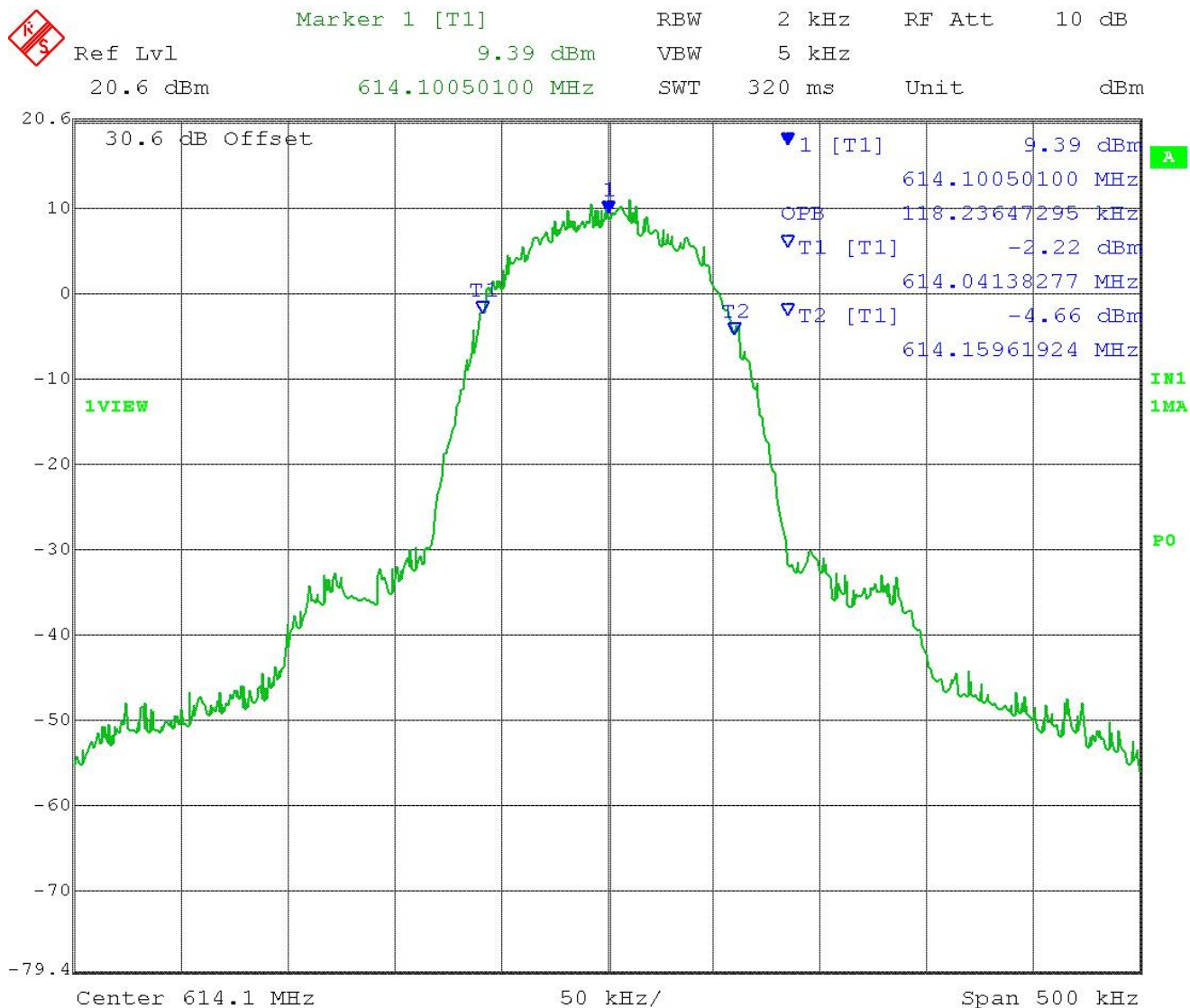
Test Data: 607.9 MHz 175K0D1W 99 % Plot



Date: 19.JAN.2017 09:48:03

OCCUPIED BANDWIDTH

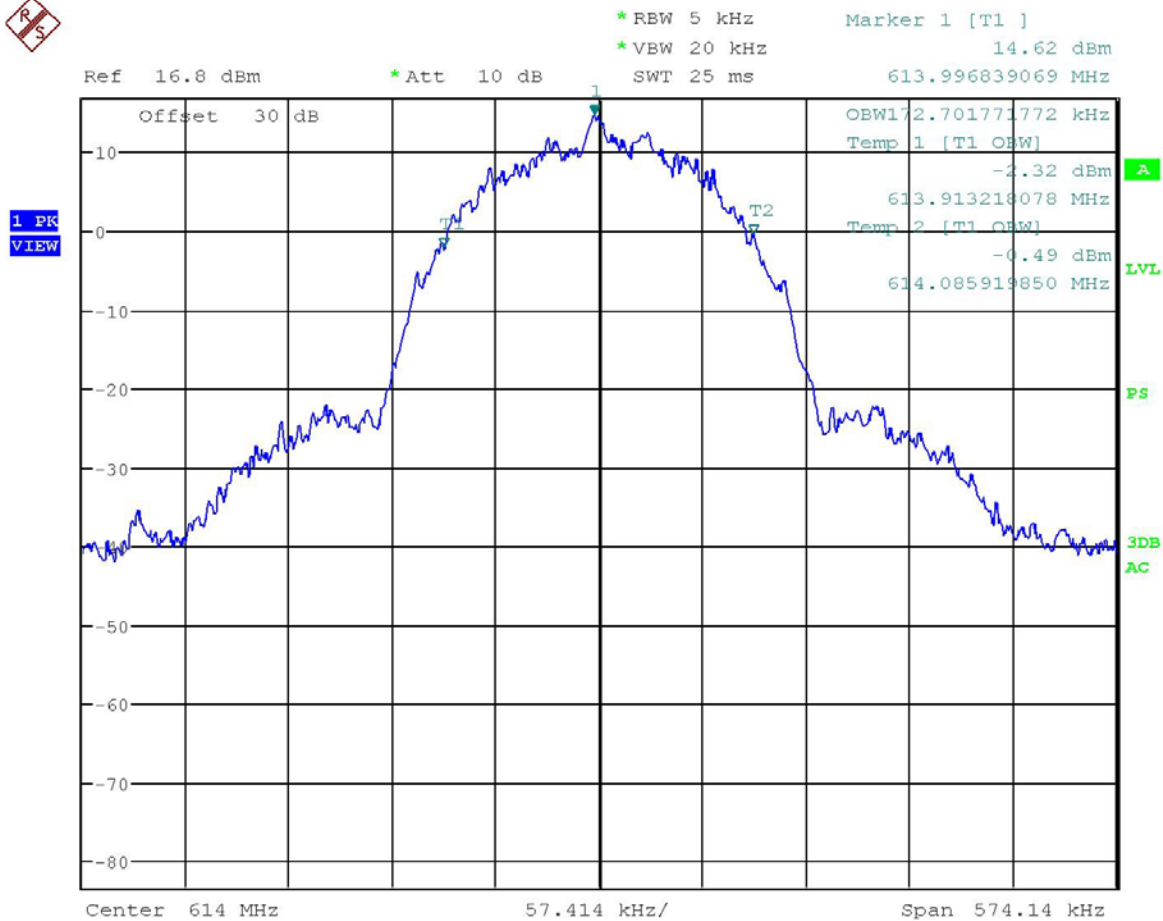
Test Data: 614.1 MHz 121K2D1W 99 % Plot



Date: 6.JAN.2017 09:38:39

OCCUPIED BANDWIDTH

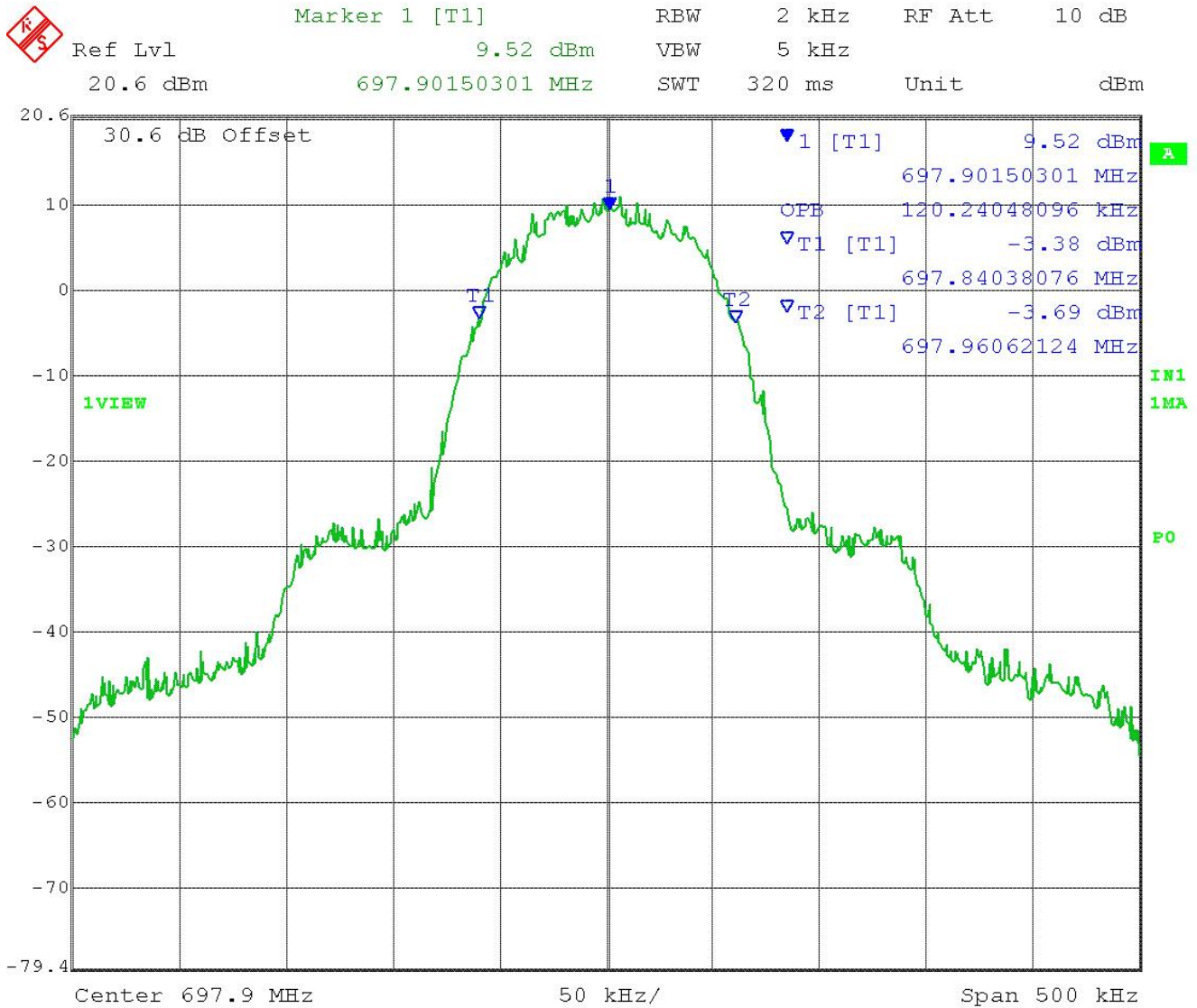
Test Data: 614.1 MHz 175K0D1W 99 % Plot



Date: 19.JAN.2017 09:48:58

OCCUPIED BANDWIDTH

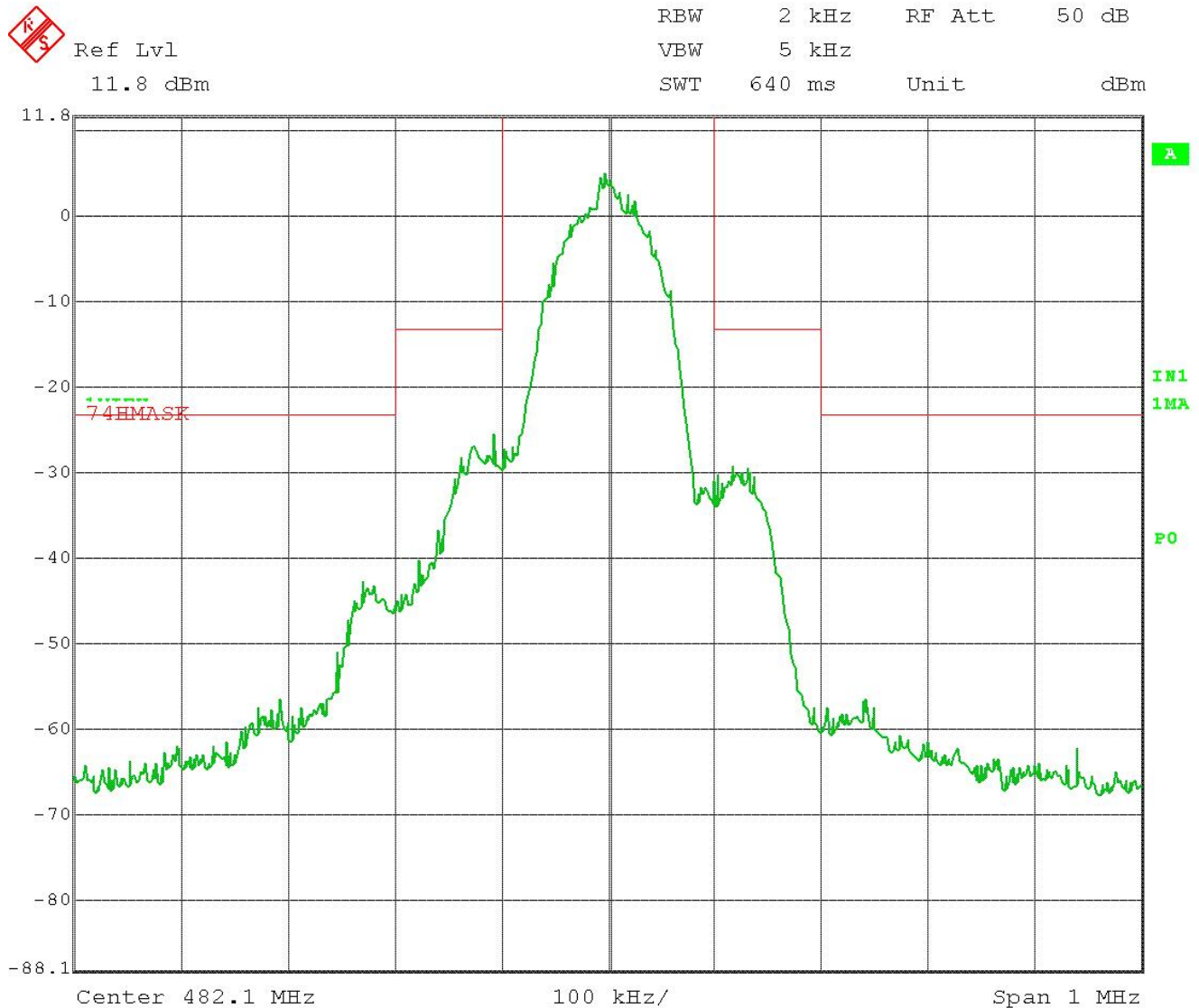
Test Data: 697.9 MHz 121K2D1W 99 % Plot



Date: 6.JAN.2017 09:44:16

OCCUPIED BANDWIDTH

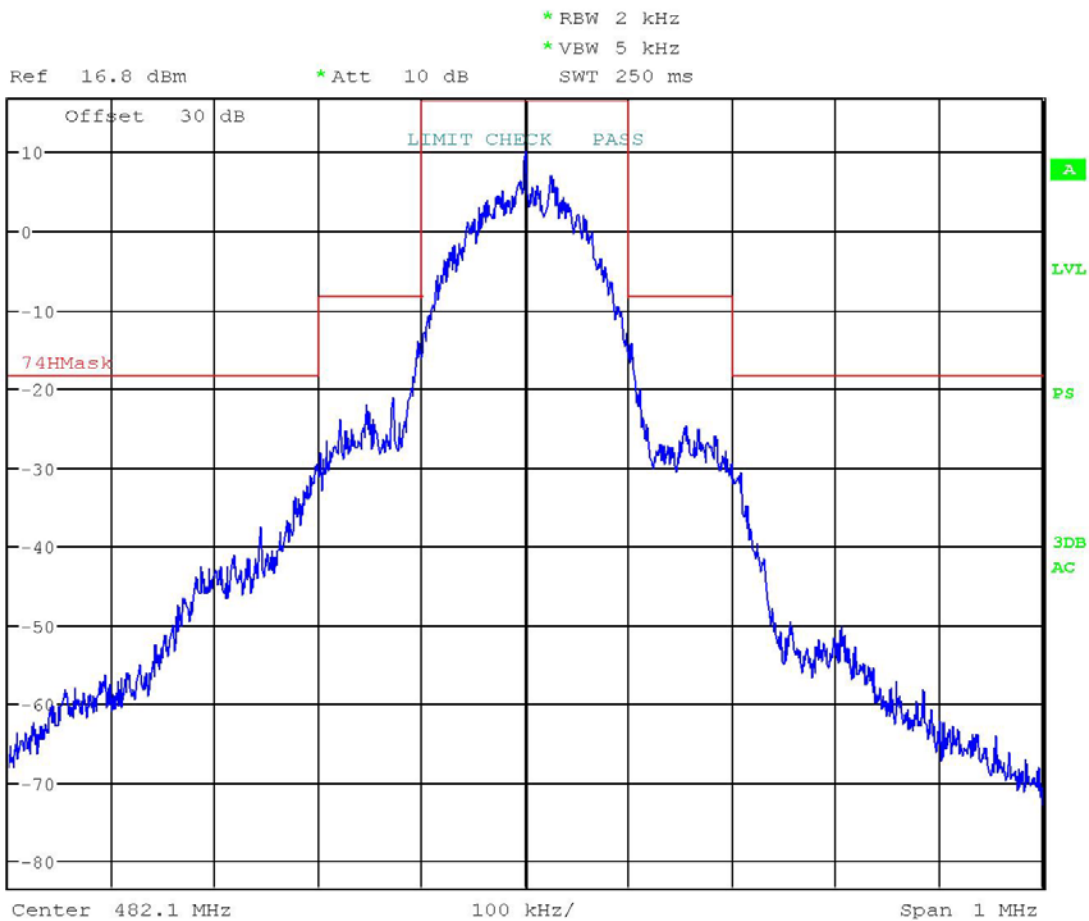
Test Data: 482.1 MHz 121K2D1W Emission Mask Plot



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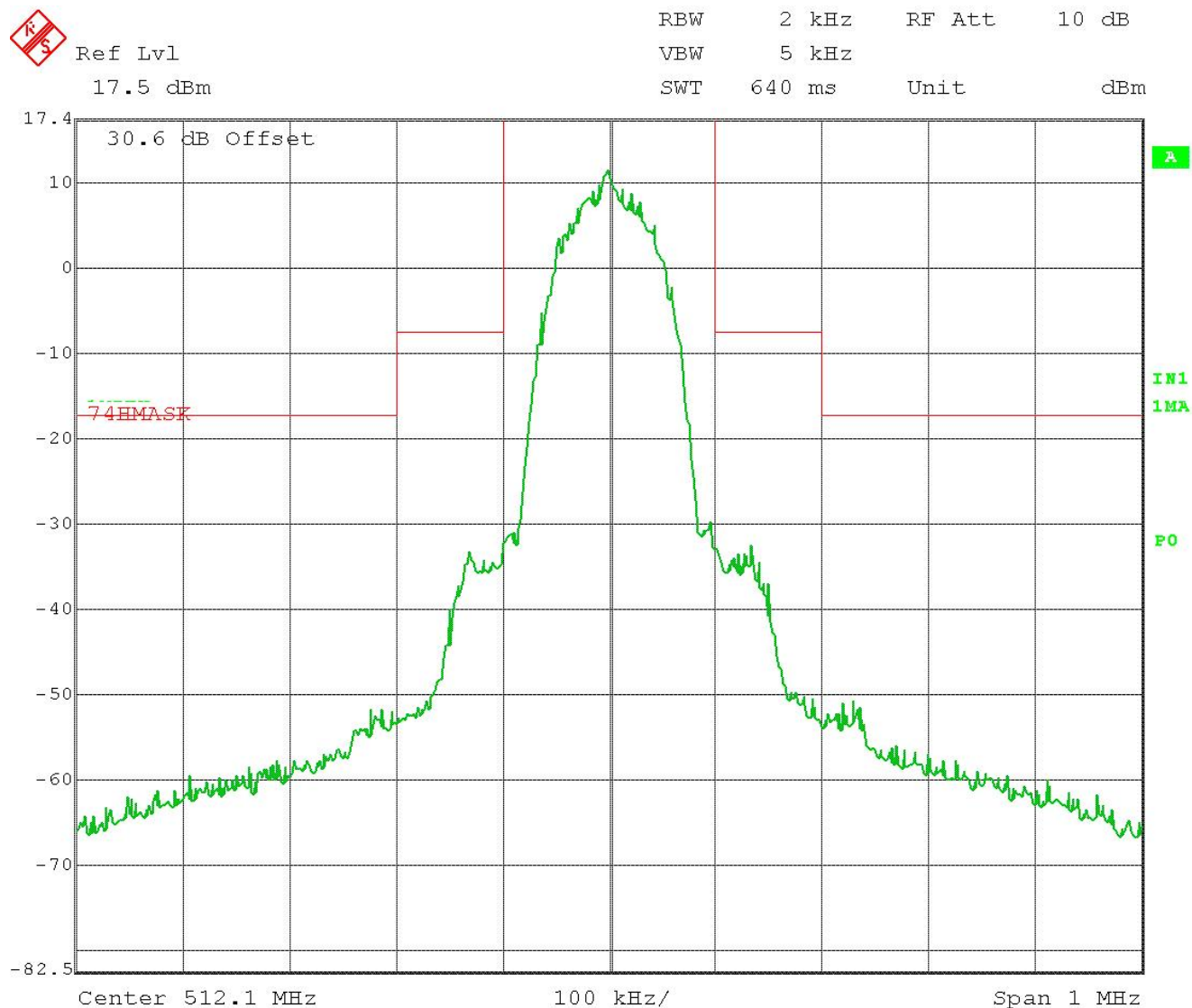
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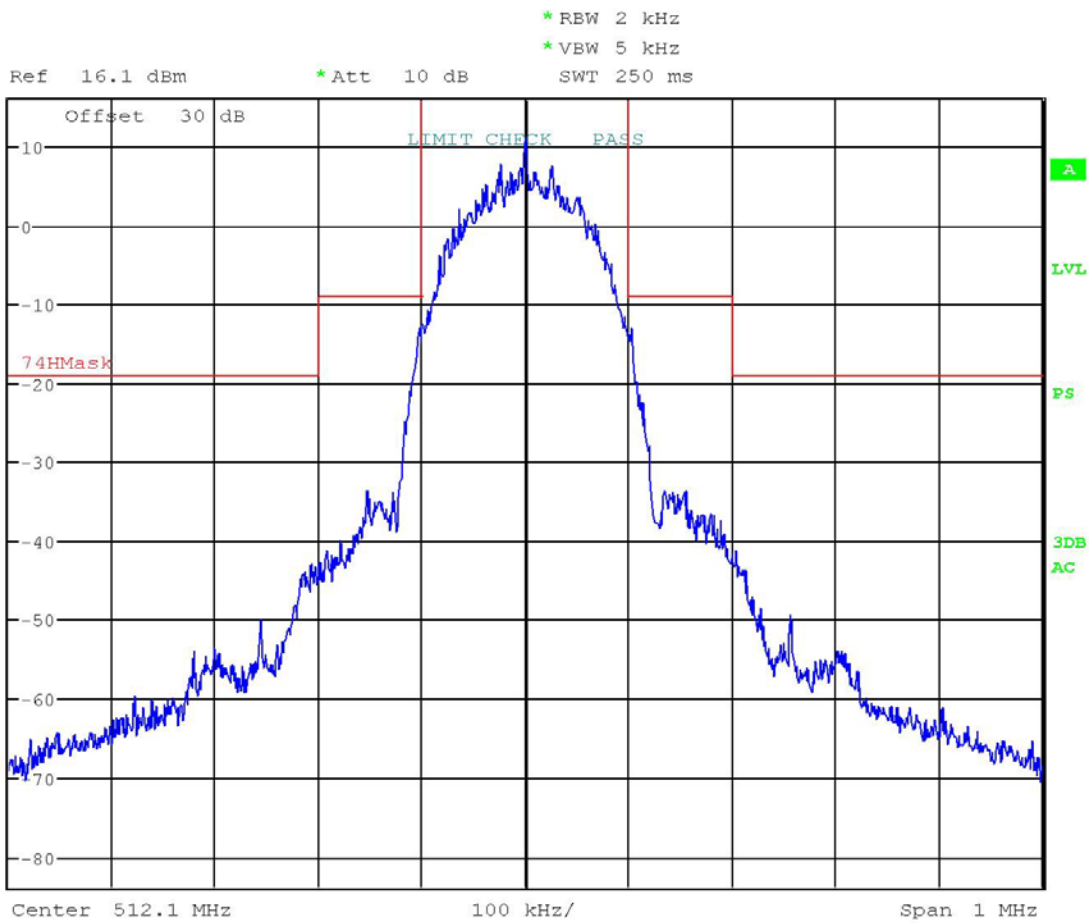
Test Data: 512.1 MHz 121K2D1W Emission Mask Plot



Date: 6.JAN.2017 10:05:11

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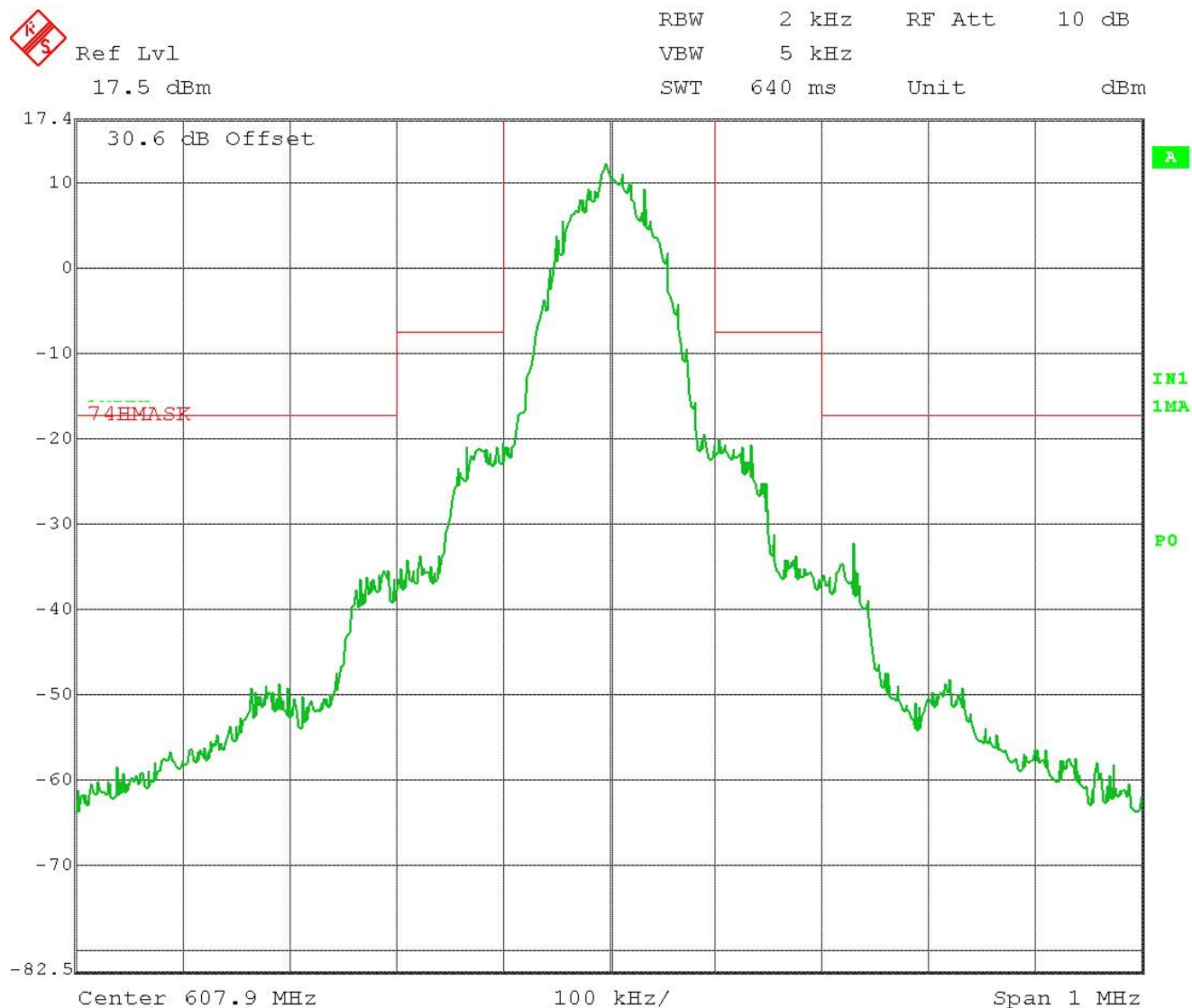
Test Data: 512.1 MHz 175K0D1W Emission Mask Plot



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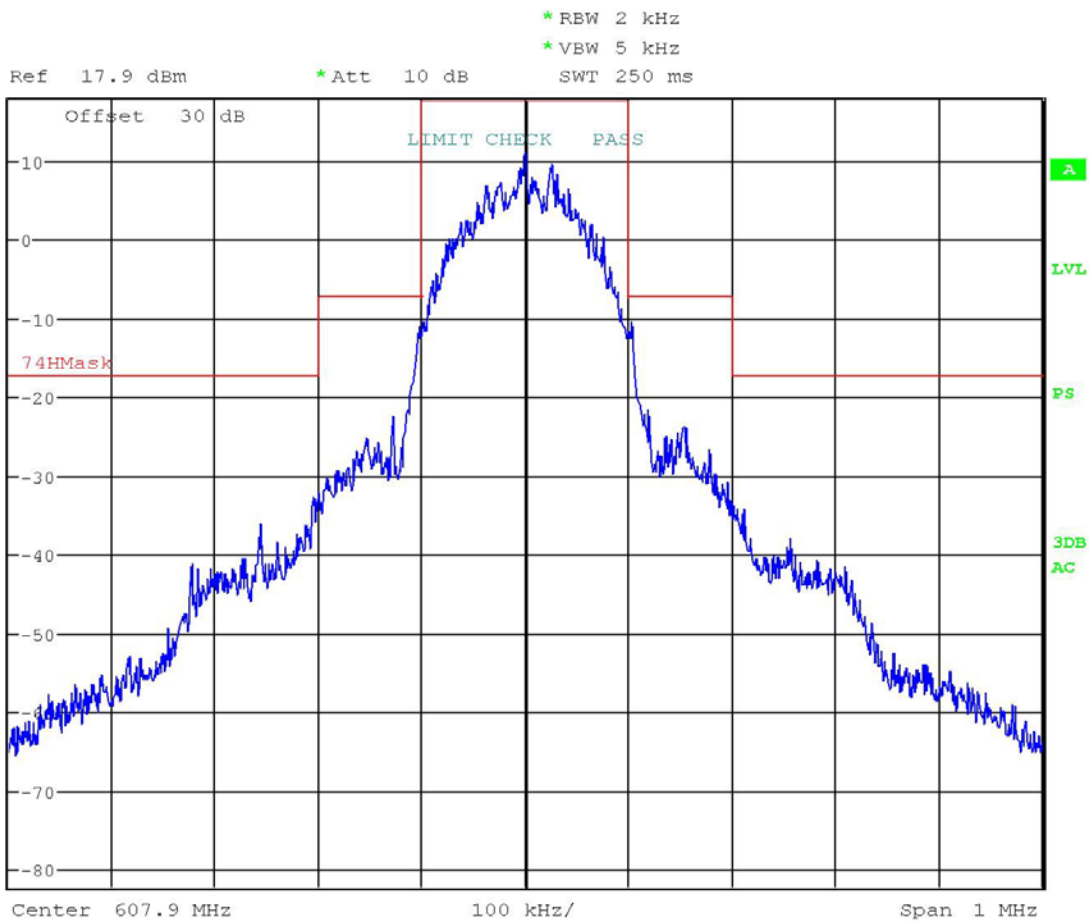
Test Data: 607.9 MHz 121K2D1W Emission Mask Plot



Date: 6.JAN.2017 10:03:00

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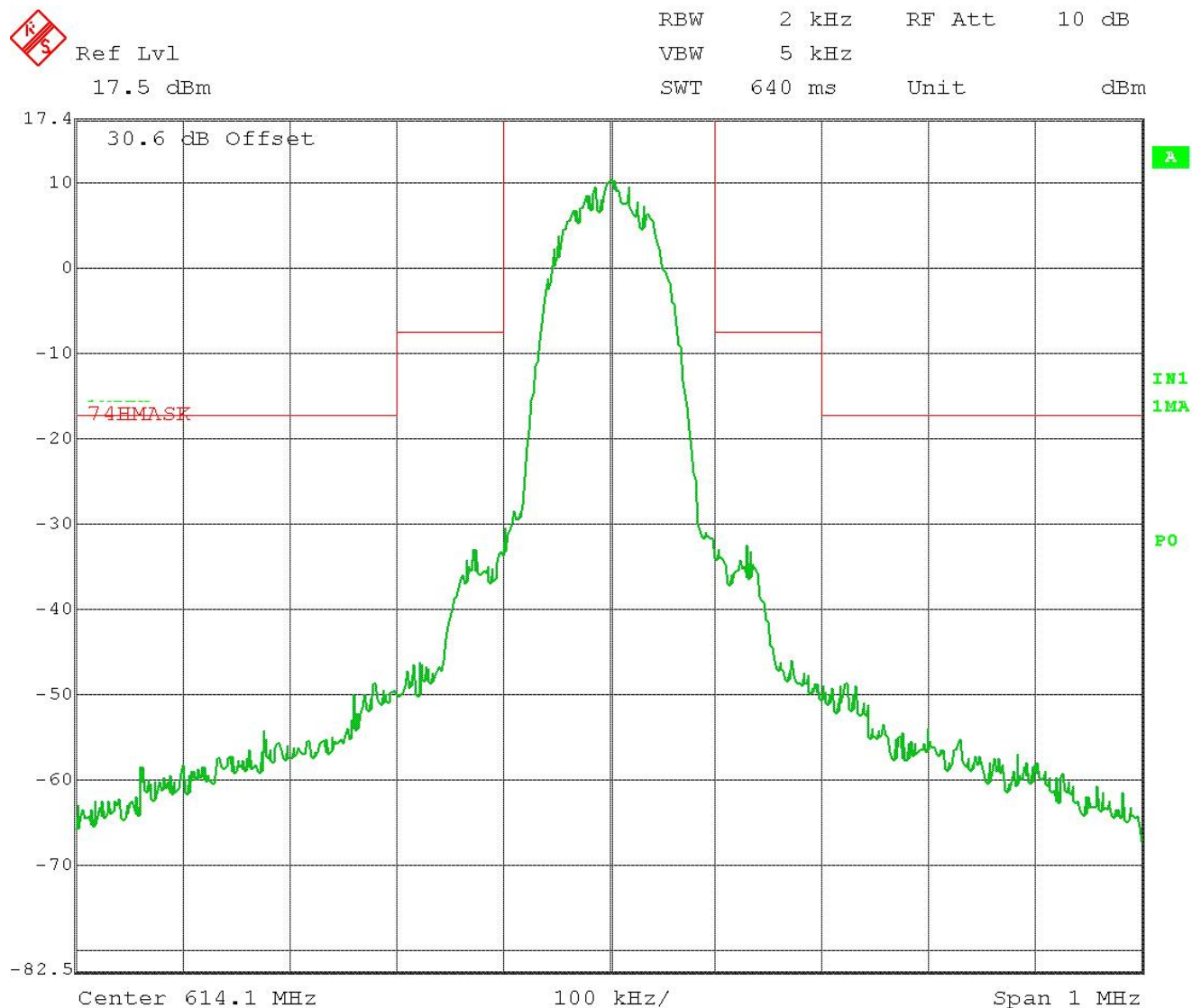
Test Data: 607.9 MHz 175K0D1W Emission Mask Plot



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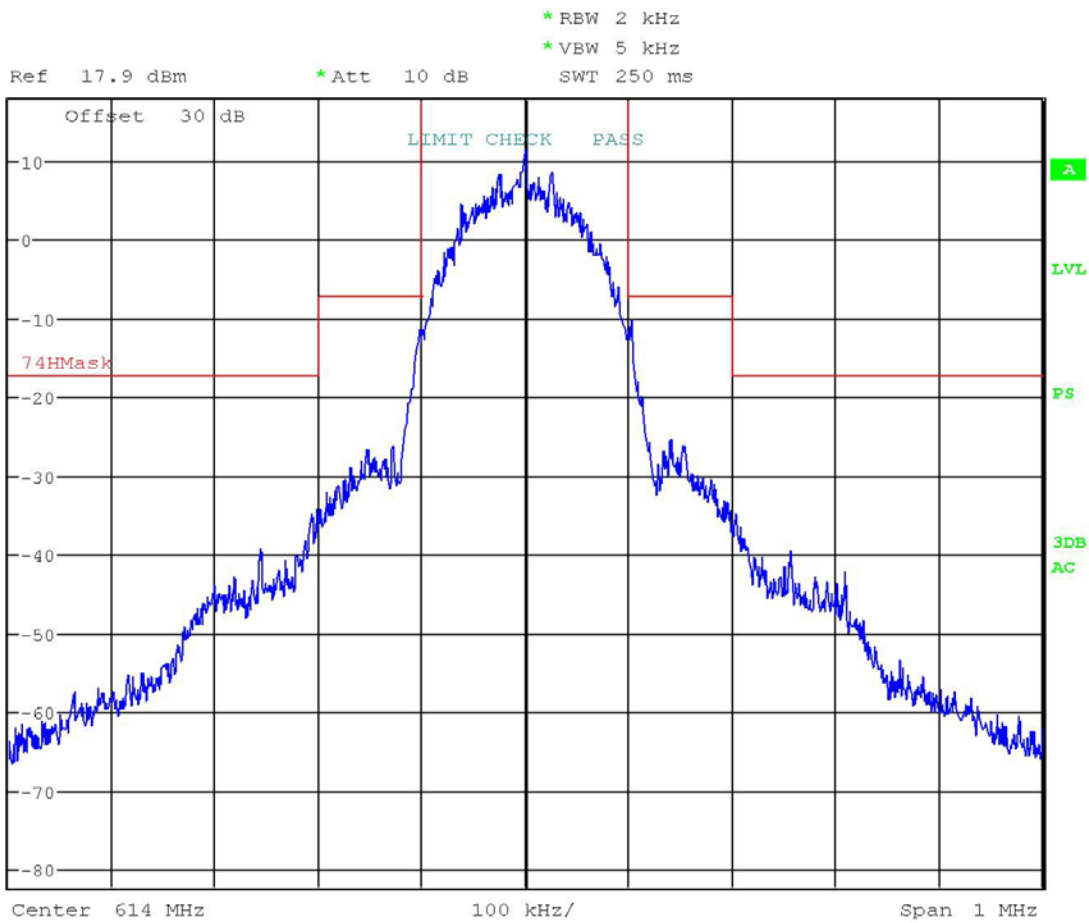
Test Data: 614.1 MHz 121K2D1W Emission Mask Plot



Date: 6.JAN.2017 10:00:51

OCCUPIED BANDWIDTH

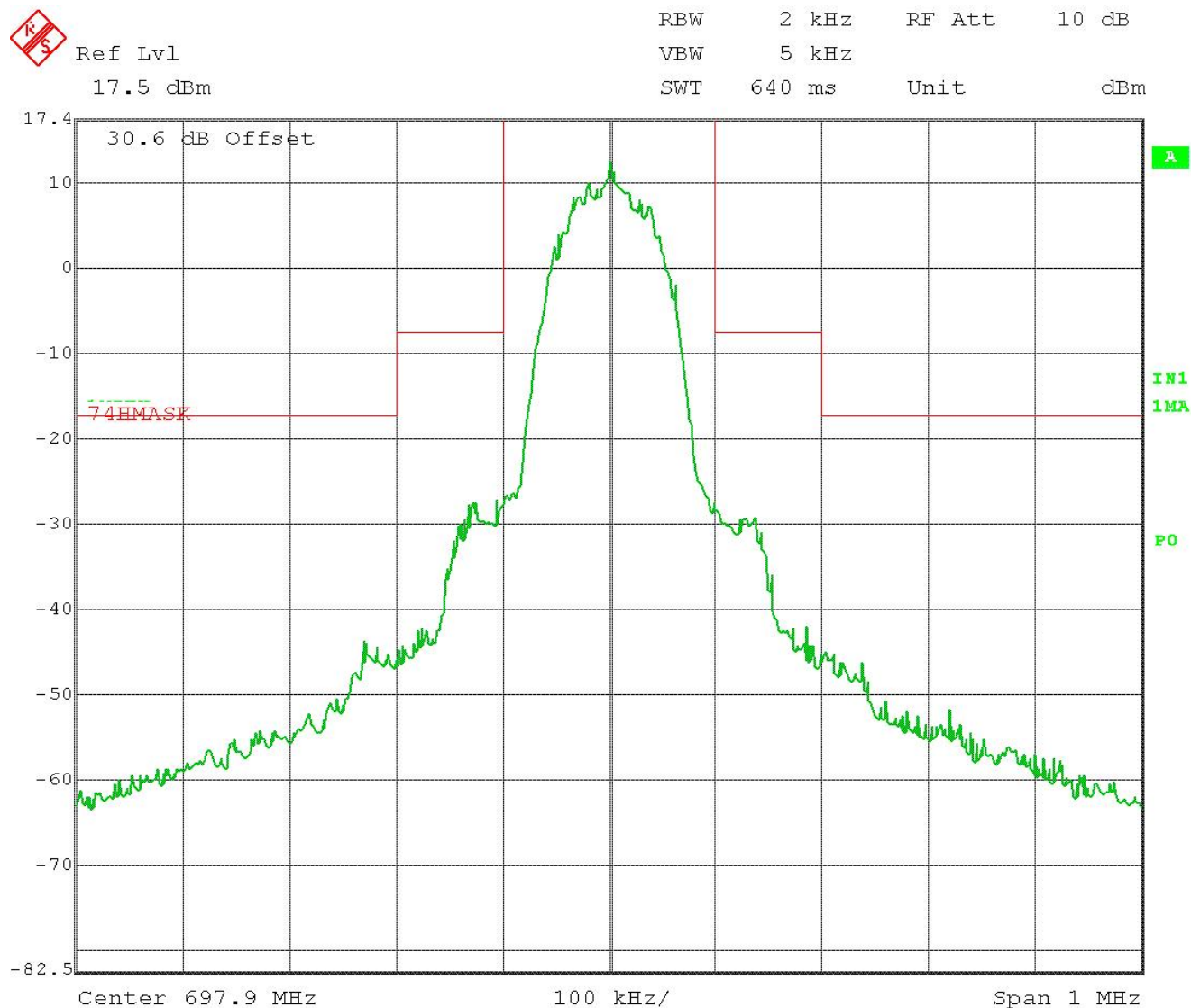
Test Data: 614.1 MHz 175K0D1W Emission Mask Plot



Date: 19.JAN.2017 09:49:52

OCCUPIED BANDWIDTH

Test Data: 697.9 MHz 121K2D1W Emission Mask Plot



Date: 6.JAN.2017 09:59:43

SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

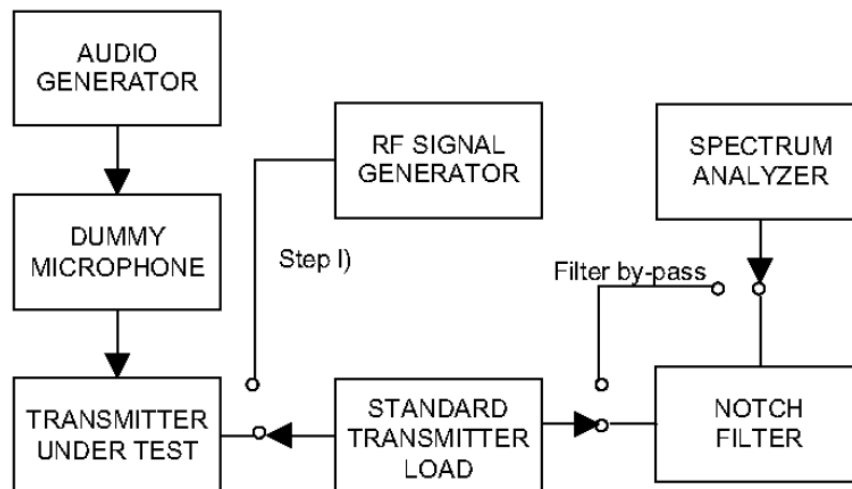
Rule Part No.: 2.1051(a), 74.861(e)(6)(iii)

Requirement: the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43 + 10\log_{10}$ (mean output power in watts) dB.

Procedure: KDB 971168 D01 Spurious Emissions at antenna term section 6
TIA 603-D Unwanted Emissions: Conducted section 2.2.13

Setup Diagram:



SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

Test Data: 482.1 MHz

	dBm	Watts	Limit dBc
Power Output	14.99	0.032	27.99
	Frequency MHz	Level dBc	Margin dB
	482.10	0	0.0
	964.20	52.8	17.8
	1446.30	63.2	28.2
	1928.40	75.2	40.2
	2410.50	68.3	33.3
	2892.60	61.5	26.5
	3374.70	61.5	26.5
	3856.80	61.5	26.5
	4338.90	73.2	38.2
	4821.00	65.8	30.8

Test Data: 512.1 MHz

	dBm	Watts	Limit dBc
Power Output	15.31	0.034	28.31
	Frequency MHz	Level dBc	Margin dB
	512.10	0	0.0
	1024.20	53.0	17.7
	1536.30	64.0	28.7
	2048.40	75.0	39.7
	2560.50	68.0	32.7
	3072.60	61.0	25.7
	3584.70	61.0	25.7
	4096.80	61.0	25.7
	4608.90	73.0	37.7
	5121.00	65.0	29.7

SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

Test Data: 607.9 MHz

	dBm	Watts	Limit dBc
Power Output	15.26	0.034	28.26
	Frequency MHz	Level dBc	Margin dB
	607.90	0	0.0
	1215.80	46.6	11.3
	1823.70	62.6	27.3
	2431.60	66.6	31.3
	3039.50	52.6	17.3
	3647.40	38.6	3.3
	4255.30	52.0	16.7
	4863.20	50.0	14.7
	5471.10	56.0	20.7
	6079.00	63.0	27.7

Test Data: 614.1 MHz

	dBm	Watts	Limit dBc
Power Output	15.19	0.033	28.19
	Frequency MHz	Level dBc	Margin dB
	614.10	0	0.0
	1228.20	55.6	20.4
	1842.30	70.6	35.4
	2456.40	70.6	35.4
	3070.50	57.6	22.4
	3684.60	67.6	32.4
	4298.70	70.6	35.4
	4912.80	59.6	24.4
	5526.90	57.6	22.4
	6141.00	70.6	35.4

SPURIOUS EMISSIONS AT ANTENNA TERMINALS (CONDUCTED)

Test Data: 697.9 MHz

	dBm	Watts	Limit dBc
Power Output	14.8	0.030	27.8
	Frequency MHz	Level dBc	Margin dB
	697.90	0	0.0
	1395.80	49.8	15.0
	2093.70	63.6	28.8
	2791.60	48.6	13.8
	3489.50	44.3	9.5
	4187.40	41.1	6.3
	4885.30	63.4	28.6
	5583.20	60.9	26.1
	6281.10	58.1	23.3
	6979.00	59.6	24.8

Results Meet Requirements

FIELD STRENGTH OF SPURIOUS EMISSIONS

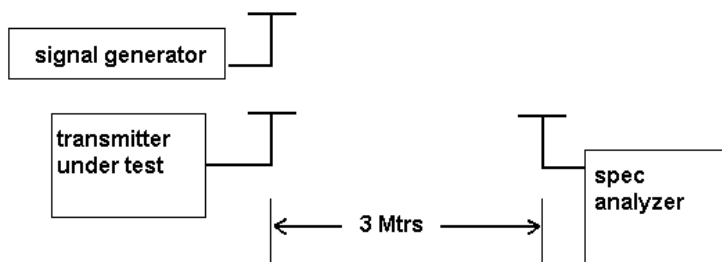
Rule Part No.: 2.1053, 74.861(e)(6)(iii)

Requirement: the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43 + 10\log_{10}$ (mean output power in watts) dB.

Procedure: KDB 971168 D01 Spurious Emissions at antenna term section 7
TIA 603-D Unwanted Emissions: Radiated section 2.2.12
ANSI C63.4 General Radiated Testing and Site Validation

Test Setup Diagram:



Test Data: 512.10 MHz Measurement Table

Tuned Freq (MHz)	Power Mode (HI / LO)	Power Output (dBm)	Power Output (Watts)	Requirement (dBc)	Bandwidth (kHz)
512.1	Hi	15.31	0.034	28.31	200
Emission Frequency (MHz)		Ant. Polarity (H / V)	Below Carrier (dBc)	Margin (dB)	
1024.20		H	76.93	48.62	
1536.30		H	76.13	47.82	
2048.40		V	71.23	42.92	
2560.50		H	72.83	44.52	
3072.60		H	68.33	40.02	
3584.70		H	67.83	39.52	
4096.80		H	70.43	42.12	
4608.90		H	70.83	42.52	
5121.00		V	71.23	42.92	

FIELD STRENGTH OF SPURIOUS EMISSIONS

Test Data: 614.10 MHz Measurement Table

Tuned Freq (MHz)	Power Mode (HI/LO)	Power Output (dBm)	Power Output (Watts)	Requirement (dBc)	Bandwidth (kHz)
614.1	Hi	15.19	0.033	28.2	200
Emission Frequency (MHz)	Ant. Polarity (H/V)	Below Carrier (dBc)		Margin (dB)	
1228.20	H	74.2		46.0	
1842.30	H	73.4		45.2	
2456.40	H	65.1		36.9	
3070.50	H	70.5		42.3	
3684.60	H	62.7		34.5	
4298.70	V	61.2		33.0	
4912.80	V	65.5		37.3	
5526.90	V	65.4		37.2	
6141.00	H	67.7		39.5	

FREQUENCY STABILITY

Rule Part No.: 2.1053, 74.861(e)(6)(iii)

Requirement: the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:

On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least $43 + 10\log_{10}$ (mean output power in watts) dB.

Procedure: KDB 971168 D01 Spurious Emissions at antenna term section 9
TIA 603-D Carrier Frequency Stability 2.2.2

Test Data: Measurement Table

Temperature	Frequency MHz	Cycles	Level (PPM)	Margin (PPM)
25°C (reference)	607.971			
-30°C	607.986	15000	24.672	25.3
-20°C	607.998	27000	44.410	5.6
-10°C	607.997	26000	42.765	7.2
0°C	607.992	21000	34.541	15.5
10°C	607.986	15000	24.672	25.3
20°C	607.972	1000	1.645	48.4
30°C	607.968	-3000	-4.934	45.1
40°C	607.962	-9000	-14.803	35.2
50°C	607.95	-21000	-34.541	15.5
Battery Voltage	Frequency	Cycles	PPM	Margin (PPM)
-15%	607.979	8000	13.159	36.8
+5%	607.971	0	0.000	50.0

Results Meet Requirements

EMC EQUIPMENT LIST

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
Adapter Type SMA to K	Pasternack	PE91010	#86	NA	NA
Attenuator K 6dB 2W DC-40	Narda	4768-6	1044-3	06/25/15	06/25/17
Antenna: Biconical 1096 Chamber	Eaton	94455-1	1096	07/14/15	07/14/17
Antenna: Log- Periodic 1122	Electro-Metrics	LPA-25	1122	07/14/15	07/14/17
Temperature Chamber LARGE	Tenney Engineering	TTRC	11717-7	09/01/16	09/01/18
Digital Multimeter	Fluke	FLUKE-77-3	79510405	10/21/15	10/21/17
Frequency Counter	HP	5385A	2730A03025	10/21/15	10/21/17
CHAMBER	Panashield	3M	N/A	04/25/16	12/31/17
Sweep/Signal Generator	Anritsu	68369B	985112	10/28/15	10/28/17
Antenna: Double- Ridged Horn/ETS Horn 2	ETS-Lindgren Chamber	3117	00041534	02/25/15	02/25/17
EMI Test Receiver R & S ESIB 40	Rohde & Schwarz	ESIB 40	100274	08/16/16	08/16/18
Software: Field Strength Program	Timco	N/A	Version 4.0	NA	NA
Antenna: Active Loop	ETS-Lindgren	6502	00062529	11/18/15	11/18/17
Hygro- Thermometer	Extech	445703	0602	06/30/15	06/30/17
EMI Test Receiver R & S ESU 40	Rohde & Schwarz	ESU 40	100320	04/01/16	04/01/18
Coaxial Cable - Chamber 3 cable set	Micro-Coax	Chamber 3 cable set (Primary)	KMKM-0244-01; KMKM-0670-00; KFKF-0198-01	08/08/16	08/08/18
Bore-sight Antenna Positioning Tower	Sunol Sciences	TLT2	N/A	NA	NA
Tunable Notch Filter 250-850 MHz	Eagle	TNF-200	250-850 MHz (#19)	06/26/15	06/26/17

*EMI RECEIVER SOFTWARE VERSION

The receiver firmware used was version 4.43 Service Pack 3